

a rectangle or other boundary that governs whether or not a selected map item can be adequately displayed to the end user. For example, if a map item is only partly shown on the edge of the navigation map, then it may not be within the “show selection” window. In contrast, a map item that is centered in the navigation map will most likely be contained within the “show selection” area. If the new selection is within the “show selection” area (query task 2314), then process 2300 may proceed to a task 2318. If the new selection is outside of the “show selection” area, then the navigation system may shift, pan, or adjust the map to ensure that the new selection is contained within the “show selection” area (task 2316).

[0239] Task 2318 may be performed to add a selection graphic to the newly selected map item or to otherwise change the appearance of the newly selected map item. As described above, a selected map item may be highlighted with shading, coloring, text, additional graphic elements, or the like. In the preferred embodiment, task 2318 causes the navigation system to distinguish the newly selected map items from the remaining map items in a visible manner.

[0240] If the navigation system is in the “show guidance indicators” mode (query task 2320), then new guidance indicators may be displayed in connection with neighboring map items (task 2322). In a practical embodiment, task 2322 determines a logical mapping for each of the new guidance indicators corresponding to the directional keys utilized by the respective presentation device. For example, up to four new guidance arrows may be displayed; one for each cardinal direction.

[0241] In response to the new map item selection, the navigation system may also update a preview area (e.g., preview area 412 in FIG. 4) to display, show, or play content related to the newly selected channel, station, or file (task 2324). In addition, change selection process 2300 may update the content description area 410 (task 2326) and/or the map item information area 408 (task 2328) as necessary. Task 2326 may update the description area 410 with information related to the current program or file corresponding to the new map item, and task 2328 may update the information area 408 with programming or control information associated with the newly selected station or channel.

[0242] FIG. 24 is a flow diagram of a navigation map presentation process 2400 that may be performed by a practical embodiment of the present invention. Process 2400 assumes that the navigation interface display system is configured in accordance with the layered architecture techniques described above. Although not a requirement of the display system, process 2400 is described herein in the context of a deployment to support one system administrator, e.g., one broadcast service provider such as a cable television company. In other words, although one display system may be deployed in a manner that supports a plurality of service providers, a realistic practical implementation will enable one service provider to support its subscribers in a centralized manner.

[0243] Map presentation process 2400 preferably begins with a task 2402, during which map databases 508 (see FIG. 5) receive and store generic map data associated with one or more deployed navigation maps. In the context of a deployment by a single service provider, map databases 508 may include generic map data related to any number of different

users (indeed, each user may have a unique set of map preferences maintained by display system 500). Map databases 508 may also contain generic map data related to any number of different map preferences, configurations, designs, or the like, where such different maps need not be associated with specific end users.

[0244] Due to the preferred server-based architecture of the display system 500, a map servers 504 receive a map request from an end user (task 2404) who wishes to view a particular navigation map. In the practical embodiment, such map requests are generated by the respective presentation layer. The map request includes a suitable map identifier, such as a URL, that enables map servers 504 to extract the appropriate data from map databases 508. A task 2406 is performed to retrieve the generic map data (from map databases 508) associated with the requested navigation map. As described above, map servers 504 may utilize any number of known database management techniques to communicate with and extract data from map databases 508.

[0245] If necessary, map presentation process 2400 performs a task 2408 to obtain content information from application databases 506. Task 2408 obtains the content data associated with the current map request. As described above, application databases 506 are typically externally-maintained databases associated with a specific presentation device, a particular content provider, or the like. For example, in a cable or satellite television deployment, an application database 506 may contain current programming data that is updated on a daily basis. In one practical embodiment, map servers 504 are suitably configured to interrogate application databases 506 and to extract the relevant data therefrom. Map servers 504 may process the relevant content data with the relevant generic map data during process 2400.

[0246] After map servers 504 obtain the content data and the generic map data, a task 2410 may be performed to suitably provide such data to the applicable presentation layer. As described above, any number of conventional data communication protocols can be employed to carry out task 2410. In particular, task 2410 preferably provides the generic map data and the content data to the application server associated with the respective presentation layer. In view of the generic nature of the map data, map servers 504 need not know the characteristics of the end user’s presentation device or the ultimate format in which the map data will be provided to the presentation device. In the preferred embodiment, each application server is configured to recognize the generic map data format used by map servers 504. In addition, each application server is compatible with the corresponding presentation device. Accordingly, a task 2412 is preferably performed by an appropriate application server to convert the generic map data and the application or content data into a format suitable for use by the specific presentation device.

[0247] Eventually, a task 2414 is performed by the respective presentation device to suitably render the navigation map on the corresponding display element. In connection with task 2414, the respective application server has generated reformatted map data in a manner that is recognizable by the presentation device. Thus, the presentation device need not be specially configured to receive or process the map data. Rather, the presentation device merely renders the